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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/820,879	04/09/2004	Sung-Sik Wang	251395US2	9268
22850 7590 04/04/2007 OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER ZUBAJLO, JENNIFER L	
			ART UNIT	PAPER NUMBER
			2609	
SHORTENED STATUTORY PERIOD OF RESPONSE		NOTIFICATION DATE	DELIVERY MODE	
3 MONTHS		04/04/2007	ELECTRONIC	

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 04/04/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
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**Office Action Summary**

Application No.

10/820,879

Applicant(s)

WANG, SUNG-SIK

Examiner

Jennifer Zubajlo

Art Unit

2609

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 8/14/06.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Drawings***

1. Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1,4,12,13,14,18 and 19 are rejected under 35 U.S.C. 102(a) as being clearly anticipate by Applicant Admitted Prior Art (fig.1) and (Pages 1-3).

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 2-6,7-11,15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art (fig.1, Pages 1-3) in view of Kwon (Korean 1020030094437).

As to claims 2-6,7-11,15-17, Applicant's Admitted Prior Art (fig.1) discloses applicant claimed invention except global purpose input/output pins, simultaneously transmitting the bit data and the color display data and the color display data being 18 bit.

However, the patent of Kwon is cited to teach that it is well known for a LDC display driver to simultaneously transmit the bit data and the color display data (see Abstract).

Therefore, it would have been obvious to one skill in the art at the time of the invention was made to have been motivated to incorporate the method of simultaneously transmitting the bit data and the color display data as taught by Kwon into the LCD driver device of Applicant's Admitted Prior Art because this will allow the display to have a faster image display system.

As to global purpose input/output pins and color display data being 18 bit is well known in the art to use GPIO and one can pick and choose the number of bit to use for color display data.

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dae Heon Kwon (Pub. No.: 1020030094437 A) in view of Yoshiharu Hashimoto (Pub. No.: US 2006/0061532).

3. As to claims 1-6 and 14-15, Kwon teaches a mobile communication terminal with a main processor including a plurality of data and address pins transmitting and separating 18 bits of data to the display simultaneously wherein the data is bit-shifted (see Abstract and figure 1). However, any number of bits and pins could be used. This is just an engineering choice of design.

4. Kwon doesn't teach transmitting predetermined bits of color display data to sequentially drive a liquid crystal display (LCD) device.

5. Hashimoto teaches transmitting predetermined bits of color display data to sequentially drive (on a dot-by-dot basis) a liquid crystal display (LCD) device (see [0003], [0006], [0007], and [0029]).

6. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission of predetermined bits of color display data to sequentially drive a liquid crystal display (LCD) device taught by Hashimoto into the mobile communication terminal with a main processor including a

plurality of data and address pins transmitting and separating 18 bits of data to the display simultaneously wherein the data is bit-shifted taught by Kwon because it is known that predetermined RGB data is one of many ways to drive a display device.

7. As to claims 7-11 and 16-17, Kwon teaches a mobile communication terminal with a main processor including a plurality of data pins transmitting and separating 18 bits of data to the display simultaneously wherein the data is bit-shifted (see Abstract and figure1). However, any number of bits and pins could be used. This is just an engineering choice of design.

8. Kwon doesn't teach transmitting predetermined bits of color display data to sequentially drive a liquid crystal display (LCD) device.

9. Hashimoto teaches transmitting predetermined bits of color display data to sequentially drive (on a dot-by-dot basis) a liquid crystal display (LCD) device (see [0003], [0006], [0007], and [0029]).

10. None of the references directly teach global purpose input/output (GPIO) pins. However, it is known that GPIO devices provide a set of IO ports, which can be configured for either input or output.

11. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission of predetermined bits of color display data to sequentially drive a liquid crystal display (LCD) device taught by Hashimoto into the mobile communication terminal with a main processor including a plurality of data pins transmitting and separating 18 bits of data to the display simultaneously wherein the data is bit-shifted taught by Kwon with the transmission of

data also through the GPIO pins because it is well known that GPIO chips turn out to be a cheaper solution than using a microcontroller for common bus protocols and predetermined RGB data is one of many ways to drive a display device.

12. As to claims 12-13 and 18-19, Kwon teaches a mobile communication terminal with a main processor including a plurality of data and address pins transmitting 18 bits of data to the display (see Abstract and figure1). However, any number of bits and pins could be used. This is just an engineering choice of design.

13. Kwon doesn't teach color display data driving a liquid crystal display (LCD) device.

14. Hashimoto teaches color display data driving a liquid crystal display (LCD) device (see [0006] and [0007]).

15. It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the transmission of color display data to drive a liquid crystal display (LCD) device taught by Hashimoto into the mobile communication terminal with a main processor including a plurality of data and address pins for transmitting 18 bits of data to the display taught by Kwon because it is known that color display data is one of many ways to drive a display device.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jennifer Zubajlo whose telephone number is (571) 272-2222. The examiner can normally be reached on Monday-Friday, 8 am - 5 pm, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amare Mengistu can be reached on (571) 270-1550. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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AMARE MENGISTU  
SUPERVISORY PATENT EXAMINER